University-Museum Collaborations Informing Practice: How Families Explain and Explore

InterActivity 2019 - Association of Children’s Museum
University-Museum Collaborations Informing Practice: How Families Explain and Explore

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Explaining vs Exploring

What do you think when you hear these terms in the context of a museum setting?

○ Do you feel drawn to one or the other as it relates to your practice? Why?
○ Can explaining be a part of play?
○ Is open-ended exploring sometimes too open-ended?
**Encouraging Explanation (Explain)**

While your child is interacting with the gears, try asking them to explain how the gears work. Ask them to tell you about the gears or to describe what happens when they interact with the gears in different ways. Ask them questions about how the gears work or what will happen when a gear moves. Encourage them to think aloud about how the gears work.

**Encouraging Exploration (Explore)**

While your child is interacting with the gears, try encouraging them to explore how the gears work. Ask them to try new things with the gears. Urge them to interact with the gears in different ways. Suggest that they figure out how the gears work, or what will happen when a gear moves. Encourage them to experiment with how the gears work.
Studies & Research Findings: Conversation Cards Study

Austin Children’s Museum Gear Exhibit

65 families, 4-6 year-old, each with 1 parent

Parents randomly given conversation card:

- Explaining
- Exploring
- Baseline

How did families explain, explore in the exhibit?

How did children explore gears in an open-ended follow-up task?
Studies & Research Findings: Conversation Cards Study

Explain Condition:
- *Parents spent more time explaining than in the Baseline condition*
- *Children engaged in more talk about causal mechanisms in the exhibit compared to the Baseline condition*
- *Children spent more time spinning gears than in Baseline*

Explore Condition:
- *Children spent more time connecting gears to one another in the exhibit than in the Baseline condition*
- *Children built more complex machines with multiple gears*

Bottom Line: Both prompts encouraged children’s rich (but distinctive) science-related engagement with gears

Studies & Research Findings: Conversation Cards Study

Also, in follow-up tasks...

- Parents’ open-ended questions at the exhibit predicted children would spend *more* time building gear machines.
- Parents’ troubleshooting predicted that children would spend *less* time building their own gear machines.
Studies & Research Findings: Gear Study

Gear exhibits at all 3 museums, 325 families with children ages 3 to 6 years

Coding scheme for children’s “systematic exploring”

Coding scheme for parents’ explanatory talk

Same follow-up tasks with gears
Studies & Research Findings: Gear Study

Children’s systematic *exploring* at exhibit predicted better performance on follow-up task.

Parents’ *explaining* at exhibit did *not* predict follow-up task.

But, sequence analysis of 5 second intervals:

- Parent *explaining* in 5-second interval predicted child systematic exploring in the NEXT 5-second interval.
- Children’s systematic *exploring* predicted children’s solutions to gear problems in follow-up task.
- Complex dynamic interaction between explaining and exploring.
Research to Practice

- Grant writing
  - “Street cred”
  - Potential new funders through UT
- Marketing
- Expertise
  - Research & Evaluation
  - Parent-child engagement
  - Staff professional development
- Future: Research Hub
  - Exhibit signage overhaul
  - Exhibits modification
Research to Practice

● Training + Facilitation
  ○ Implementing research findings
  ○ Checking own biases

● Visitor Experience
  ○ Language and signage
  ○ Visitor engagement/ownership
  ○ Accessible dissemination
Research to Practice

Staff Training - All-staff meeting

● Discussed research findings
● Related to practice
● Tried it out on the exhibit floor
Practice to Research

- Deeper Museum Understanding
  - Insight into museum’s mission and practice

- New Lines of Research
  - Questions guided by museum practitioners

- Natural Setting
  - Family interactions outside of the lab
Small Group Discussion

- How do these findings relate to your practice?
- When to intervene vs not? Timing of intervention?
- How can explaining and exploring work together?
- Benefits and challenges of research partnerships?
- How would a museum-university research partnership benefit your institution?
Welcome to the gear exhibit! Gears come in many different sizes and colors. They can be used to make many different kinds of machines.

Baseline

We are interested in how parents and children spend time together at the exhibits. We would like to learn more about families visiting the exhibits at the museum. Please interact with your child as you normally would.